

On 'Learning Term Rewriting Systems From Entailment'

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Summary

Summary form only given. We study exact learning of term rewriting systems from entailment and refute a recent result by Arimura, Sakamoto and Arikawa about polynomial time learnability of k -variable linear tree translations (LTT (k)). It was incorrectly claimed that the length of derivations of LTT (k) is bounded by a polynomial in the size of the initial term. This claim led to their result on polynomial time learnability of LTT (k). We present a simple system in the class of 1-variable linear tree translations that has a derivation of exponential length. We also discuss why it is difficult to syntactically separate the rewriting systems defining polynomial functions and the rewriting systems defining exponential functions. We then identify a few requirements for polynomial time learnability of rewriting systems and discuss how these requirements may be achieved.

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